Jackson Wheeler

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Passionate and driven software engineer with a deep understanding and practical experience in **backend**, **frontend**, **embedded**, and **networks** software engineering. Determined to collide his technical & personal skills in order to deliver solutions that matter.

Education

University of California, San Diego Fall 2020 – Fall 2024

B.S. Computer Science - CSE GPA: 3.86

Work

Sofware Engineering Intern | *Sony Electronics - San Diego, CA* July 2023 - Present

CMS Database Wrapper (Go, PostgreSQL)

- Implemented **reverse sync**, from CMS to our wrapper database, converting CMS items and comparing them

HTML Video Synchronization (JavaScript)

- Developed server & client code to **synchronously provide & play HTML videos** on multiple TVs

Web Page Development (Vue/Vuetify)

- Developed **multiple external web pages** to satisfy needs of various groups within the company: INZONE Buds showcase, Sketchfab download page, Olivia Rodrigo X LinkBuds S collab mobile page
- **Redesigned** web page on embedded device to be **cleaner**, more **user friendly**, and implemented feature allowing **sequences of test commands** to be created, saved, exported, and imported

Sofware Engineer Intern | *Marine Corps Tactical Systems Support Activity - Camp Pendleton* Summer 2021

- Researched strategies to automate testing on Marine Corps systems
- Developed & implemented **Java** code to begin **automated testing** of a military Windows application. Reads test input data from CSV and utilizes application's UI to plot friendly/enemy tracks.

Projects (Visit Portfolio Website for more details!)

Automatic Plant Watering System - Server & Architecture (Python, SQL) Fall 2024

- Designed & implemented **system architecture**. In-plant watering MCU ↔ Raspberry Pi Server ↔ mobile app
- Implemented **API server** & **SQL database**. **Port forwarding** → publicly accessible API

Microcontroller Firmware (C) Fall 2024

- Developed microcontroller to **notify user via bluetooth** whenever it is **"lost"** (left stationary for X time)
- Wrote multiple **firmware drivers from scratch**, refactored to **minimize power consumption**

IoT Project - Embedded Team (C++) | *Arduino Board* Spring 2023

- Deployed code to 25 IoT Arduino boards for data collection in UCSD's Fitness Center during May 2023
- Implemented **WiFi** & **BLE** capabilities with logging data to **API** on embedded devices

Implementing Operating System (Java) | Spring 2023

- Implemented **system calls**, **multi-programming**, **on-demand paging**, and **swapping** in the Nachos OS

ChatGPT Console App (C#) | *.NET core, API* May 2023

- Developed **.NET core** console application allowing chatting with ChatGPT in **real time** via OpenAI **API**

Network Router Implementation (C) | *Networking Protocols: Ethernet, ARP, IP, ICMP* March 2023

- Developed code to **accurately & efficiently route** and send incoming packets to the next step in the network.
- **Improved efficiency** by implementing custom data structures

Sliding Window Protocol (C) | *Networking Protocols: Sliding Window, CRC-8, Framing* February 2023

- Implemented sliding window protocol, ensuring **reliable in-order delivery** of messages b/w senders and receivers

Team: San Diego Zoo Exhibit Navigation App (Java) | *Andriod Studio, Agile* Spring 2022

- Developed application to direct users on **customizable tour** of the San Diego Zoo, based on desired exhibits

Skills & Other

Languages: *Go*, *C*, *Python*, *JavaScript*, *Java*, *PostgreSQL*; C++, C#; HTML, CSS; Bash; Haskell
Tools: MCUs, Raspberry Pis, Arduino; APIs, pgAdmin, Linux, Docker, Virtual Machines; Vue/Vuetify
Former T3/SECRET Security Clearance Holder